

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 08/915,683

REMARKS

Claims 1, 5-7 and 9 are all the claims pending in the application.

Claims 1, 5-7 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Evans et al (4,504,570) in view of either Tanemura et al (5,081,009) or Shuto et al (5,110,719) and Tasur et al (5,210,013).

It was indicated that in Applicants' Third Supplemental Declaration, the results with respect to D_{max} , middle sensitivity, D_{min} and negative sensitivity for the emulsions containing the non-sulfur atom containing solvent are much smaller than those when sulfur-containing compound A is employed. The Examiner did not consider these differences to be significant and unexpected. The Examiner also considered that sulfur-containing silver halide solvent compound A has an effect on the sensitivity of an emulsion as well as on other photographic properties.

Applicants respectfully traverse the rejection for the following reasons.

Effect of Compound A on Photographic Properties

In the Third Supplemental Declaration, Samples Nos. 25-28 were prepared using compound B which contains no sulfur atom as the solvent, instead of compound A which contains sulfur atoms (Samples Nos. 13-16). Samples Nos. 25-28 were otherwise prepared in the same manner as Samples Nos. 13-16 (Sample No. 25 and Sample No. 13, and so on). See Third Supplemental Declaration, page 3.

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For the Examiner's convenience, Applicants have summarized the results obtained in Samples Nos. 25-28 (Third Supplemental Declaration) and those in Samples Nos. 13-16 (Second Supplemental Declaration) in the table below:

Sample No.	D _{max}			D _{min}			Middle sensitivity			Negative sensitivity			Coefficient of variation in grain thickness
	Y	M	C	Y	M	C	Y	M	C	Y	M	C	
25 (inv)	2.17	2.31	2.47	0.15	0.16	0.24	110	126	147	83	83	83	16%
13 (inv)	2.18	2.32	2.48	0.15	0.16	0.23	111	128	149	82	82	81	15%
26 (inv)	2.13	2.27	2.43	0.17	0.18	0.26	108	124	146	86	88	88	29%
14 (inv)	2.14	2.29	2.45	0.17	0.18	0.26	109	125	147	85	88	87	28%
27 (comp)	2.10	2.24	2.40	0.19	0.21	0.29	105	121	142	91	93	94	35%
15 (comp)	2.12	2.26	2.42	0.19	0.20	0.28	105	120	141	92	94	95	33%
28 (comp)	2.04	2.19	2.33	0.23	0.24	0.33	101	118	137	100	103	105	45%
16 (comp)	2.06	2.21	2.35	0.23	0.24	0.32	102	119	138	99	101	103	43%

As is clear from the above results, substantially the same results were obtained in Sample Nos. 25-28 wherein non-sulfur atom-containing compound B was used as a solvent and Sample Nos. 13-16 wherein sulfur atom-containing compound A was used as a solvent (Sample No. 25 is compared to Sample No. 13, and so on). That is, compound A, as a solvent, does not have any significant effect on the photographic properties of an emulsion, and the unexpected results are due to the control of coefficient of variation of grain thickness.

Differences in D_{min} and Negative Sensitivity

Further, Sample Nos. 25 and 26 of the present invention were higher in D_{max} and middle sensitivity, but remarkably lower in D_{min} and Negative sensitivity than Comparative Sample Nos. 27 and 28. Specifically, Sample Nos. 25 and 26 have a negative of sensitivity of between 81 to

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88, whereas Sample Nos. 27 and 28 have a negative sensitivity of between 91 to 105. As explained above, this difference in the negative sensitivity is significant, in that the difference in the densities of negative images after the samples are exposed to light is significant.

Significance of the Differences in D_{min} and Negative Sensitivity

Applicants herewith attach a Fourth Supplemental Declaration Under 37 C.F.R. § 1.132 of Takefumi HARA. The Fourth Supplemental Declaration clearly demonstrates the significant and unexpected results, and therefore establishes patentability of the present invention.

In the Fourth Supplemental Declaration, the density of negative image corresponding to a reversal negative relative sensitivity of 88 or less is compared with the density of the negative image corresponding to a reversal negative relative sensitivity of larger than 90.

Specifically, the samples having various relative sensitivities were exposed to light, and the densities of the negative images were determined. Takefumi HARA notes that the difference in density between the samples having a relative sensitivity of 88 or less and samples having relative sensitivity of larger than 90 is significant and can be visually observed by naked eyes of human.

Thus, the differences in D_{min} and negative sensitivity, between the samples of the invention and the compared samples as set forth in the Table above, are significant. This is because the difference in the density of negative images after the samples are exposed to light is significant.

The above experimentation concretely demonstrates that the unexpected results of the present invention are obtained independent of the presence of sulfur atom in the silver halide

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solvent, and further, that control of coefficient of variation of grain thickness is critical to achieving the effects of the present invention.

Moreover, Takefumi Hara concludes that the effect of decreasing the reversal negative sensitivity due to the emulsion of the present invention, having a coefficient of variation in grain thickness of not more than 30%, is significant and unexpected.

In view of the above, the present invention is not obvious over the cited references.

Withdrawal of the rejection and allowance of the claims 1, 5-7 and 9 are earnestly solicited.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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